

Remarks

Claims 1-12 and 14 are pending herein. Claims 4 and 10 are withdrawn from further consideration as being drawn to non-elected inventions, and claims 6, 11 and 14 are withdrawn from further consideration as being drawn to a non-elected species.

By this Amendment, claim 1 is amended. Specifically, claim 1 is amended in part to recite that the impact modifier consisting of (A) and (B) provides the claimed compositions with a higher Notched Charpy impact strength at -40°C and at +23°C than does an impact modifier consisting of (A) or (B) individually. Support for this recitation can be found in the specification at, e.g., page 15, in Tables 1 and 2. Applicants respectfully submit that this amendment does not raise new issues because it does not change the recited ingredients of the claimed compositions and, therefore, would not require a new search.

Claim 1 is further amended to change the recitation "copolymers of alkyl (meth)acrylate with at most 30 mol% of a vinyl monomer" to --copolymers of alkyl (meth)acrylate with more than 0 mol% and at most 30 mol% of a vinyl monomer--. Applicants respectfully submit that this amendment to claim 1 does not raise new issues because the recited embodiment (i.e., a copolymer of alkyl (meth)acrylate and a vinyl monomer, has been considered by the Examiner.

In the Office Action, claims 1-3, 5, 7-9 and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Japanese '947 ("JP '947") for reasons of record.

In view of the amendments and remarks herein, reconsideration and withdrawal of the rejection are respectfully requested.

I. The Rejection

According to the Office Action:

It is not clear that a core of alkyl(meth)acrylate with at most 30% vinyl monomer that can be alkyl(meth)acrylate distinguishes over the HIA-15 core shell copolymer used in the examples of the reference.

Additionally, at page 8 of the translation, graft base polymers include polybutadiene, butadiene copolymer with styrene or methyl (meth)acrylate and acrylate copolymers. As suggested by the JP '947, it would have been obvious to use a core-shell impact modifier having a polybutadiene, butadiene copolymer or acrylate copolymer core as the graft copolymer impact modifier in the thermoplastic polyester compositions of the reference.

Applicants respectfully submit that claims 1-3, 5, 7-9 and 12 would not have been obvious over JP '947.

As noted previously, claim 1 has been amended in part to change the recitation "copolymers of alkyl (meth)acrylate with at most 30 mol% of a vinyl monomer" to -- copolymers of alkyl (meth)acrylate with more than 0 mol% and at most 30 mol% of a vinyl monomer--. This amendment clarifies that alkyl (meth)acrylate homopolymers are not within the scope of materials for use as the core.

In addition, claim 1 has been amended to state that the impact modifier consisting of (A) and (B) provides the claimed compositions with a higher Notched Charpy impact strength at -40°C and at +23°C than does an impact modifier consisting of (A) or (B) individually.

Although JP '947 teaches that graft base polymers include polybutadiene, butadiene copolymers with styrene or methyl (meth)acrylate, and acrylate copolymers, the reference does not specifically teach the use of a core-shell copolymer (A) within the scope of amended claim 1. The only core-shell copolymers disclosed in JP '947, to the best of Applicants' understanding, are polyacrylate core/methylmethacrylate shell graft copolymers. The core-shell copolymer (A) and the ethylene copolymer (B) recited in amended claim 1 and the recited specific amounts and ratios thereof provide the claimed composition with a higher Notched Charpy impact strength at -40°C and at +23°C than does an impact modifier consisting of (A) or (B) individually. JP '947 does not address Notched Charpy impact strengths at -40°C or at +23°C and does not teach or suggest that particular core-shell copolymers and particular ethylene copolymers (B), used in

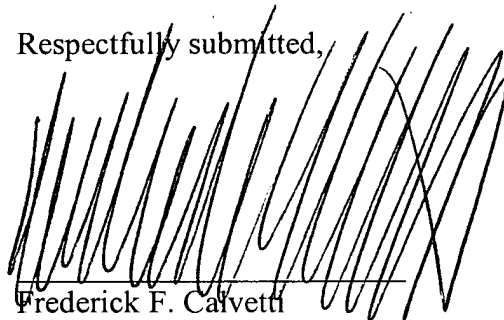
combination in specific amounts and at particular ratios, will provide a thermoplastic polyester composition with a higher Notched Charpy impact strength at -40°C and at +23°C than does an impact modifier consisting of (A) or (B) individually.

Therefore, for at least this reason, Applicants respectfully submit that claims 1-3, 5, 7-9 and 12 would not have been obvious over JP '947.

II. Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully request that the rejection of claims 1-3, 5, 7-9 and 12 be withdrawn and that these claims be allowed.

Respectfully submitted,



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LISTING OF CLAIMS

Claim 1. (Currently Amended): Thermoplastic polyester compositions comprising, by weight:

- (i) a thermoplastic component consisting of a thermoplastic polyester; and
- (ii) an impact modifier consisting of:

(a) a core-shell copolymer (A); wherein the core consists of one or more polymers selected from the group consisting of isoprene homopolymers, butadiene homopolymers, copolymers of isoprene with at most 30 mol% of a vinyl monomer, and copolymers of butadiene with at most 30 mol% of a vinyl monomer, and copolymers of alkyl (meth)acrylate with more than 0 mol% and at most 30 mol% of a vinyl monomer, the vinyl monomer in the core being selected from the group consisting of a styrene, an alkylstyrene and an alkyl (meth)acrylate; further wherein the shell consists of one or more polymers selected from the group consisting of styrene homopolymers, alkylstyrene homopolymers, methyl methacrylate homopolymers, and copolymers consisting of at least 70 mol% of a styrene, alkyl styrene or methyl methacrylate with at most 30 mol% of a vinyl acetate; and

(b) an ethylene copolymer (B) chosen from ethylene-unsaturated epoxide copolymers (B2);

(iii) the (B)/(A) ratio being between 40/60 and 10/90 for proportions of impact modifier between 18 and 40% in 82 to 60% of polyester, respectively;

(iv) the (B)/(A) ratio being between 40/60 and 25/75 for proportions of impact modifier between 2 and 18% in 98 to 82% of polyester, respectively;

wherein said impact modifier consisting of (A) and (B) provides the compositions with a higher Notched Charpy impact strength at -40°C and at +23°C than does an impact modifier consisting of (A) or (B) individually.

Claim 2 (Previously Amended): Compositions according to Claim 1, wherein the polyester is selected from PET and PBT.

Claim 3 (Previously Amended): Compositions according to Claim 1, comprising up to 30 parts by weight of copolyetherester per 100 parts of thermoplastic polyester.

Claim 4 (Previously Amended; Withdrawn): Compositions according to Claim 1, comprising up to 30 parts by weight of polycarbonate per 100 parts of thermoplastic polyester.

Claim 5 (Previously Amended): Compositions according to Claim 1, wherein the copolymer (A) comprises an elastomer core and at least one thermoplastic shell.

Claim 6 (Previously Amended; Withdrawn): Compositions according to Claim 1, wherein the copolymers (B1) are ethylene-alkyl (meth)acrylate-maleic anhydride copolymers which comprise from 0.2 to 10% by weight of maleic anhydride and from 0 to 40% by weight of alkyl (meth)acrylate.

Claim 7 (Previously Amended): Compositions according to Claim 1, wherein the ethylene-unsaturated epoxide copolymers (B2) are ethylene-alkyl (meth)acrylate-unsaturated epoxide copolymers obtained by copolymerization of the monomers and contain from 0 to 40% by weight of alkyl (meth)acrylate and up to 10% by weight of unsaturated epoxide.

Claim 8 (Previously Amended): Compositions according to Claim 1, comprising, per 100 parts by weight, 75 to 95 parts of polyester for 25 to 5 parts of impact modifier, respectively.

Claim 9 (Previously Amended): Compositions according to Claim 1, wherein the proportions of (A) and (B) are that the (B)/(A) ratio is between 40/60 and 25/75, whatever the amount of impact modifier in the polyester.

Claim 10 (Previously Amended; Withdrawn): Impact-modifier compositions comprising:

- (a) a core-shell copolymer (A);
 - (b) an ethylene copolymer (B) selected from ethylene-unsaturated carboxylic acid anhydride copolymers (B1), ethylene-unsaturated epoxide copolymers (B2) and blends thereof;
- the (B)/(A) ratio being between 40/60 and 10/90 for proportions of impact modifier between 18 and 40% in 82 to 60% of polyester, respectively,
- the (B)/(A) ratio being between 40/60 and 25/75 for proportions of impact modifier between 2 and 18% in 98 to 82% of polyester, respectively, and advantageously between 5 and 18% in 95 to 82% of polyester, respectively.

Claim 11 (Previously Added; Withdrawn): Compositions according to Claim 6, wherein the amount of alkyl (meth)acrylate is 5 to 40% by weight.

Claim 12 (Previously Added): Compositions according to claim 1, wherein the compositions consist of the thermoplastic polyester and the impact modifier.

Claim 13 (Cancelled)

Claim 14 (Previously Added; Withdrawn): A thermoplastic polyester composition comprising, by weight:

- (i) a thermoplastic polyester; and
- (ii) an impact modifier comprising:

(a) a core-shell copolymer (A); wherein the core consists of one or more polymers selected from the group consisting of isoprene homopolymers, butadiene homopolymers, copolymers of isoprene with at most 30 mol% of a vinyl monomer, and copolymers of butadiene with at most 30 mol% of a vinyl monomer, the vinyl monomer in the core being a styrene or an alkylstyrene; further wherein the shell consists of one or more polymers selected from the group consisting of styrene homopolymers, alkylstyrene homopolymers and copolymers consisting of at least 70 mol% of a styrene or an alkyl styrene with at most 30 mol% of a vinyl acetate; and

(b) an ethylene copolymer (B) chosen from ethylene-unsaturated carboxylic acid anhydride copolymers (B1); wherein the (B1)/(A) ratio is between 40/60 and 10/90 for proportions of the impact modifier between 18 and 40% by weight of the thermoplastic polyester composition, further wherein the (B1)/(A) ratio is between 40/60 and 25/75 for proportions of the impact modifier between 2 and 18% by weight of the thermoplastic polyester composition.